ARIZONA CHILD FATALITY REVIEW PROGRAM



Brief Program Overview 2009 Data Findings



Arizona Child Fatality Review Program

- Created in 1993 by Arizona statute
 - Data collection began 1994
- 1 State Team, 12 Local Teams
 - State Team makes recommendations, educates the public
 - Local Teams review individual cases
 - Team membership outlined in statute
- Program coordination by ADHS-BWCH

Health Services

Arizona Child Fatality Review Process

- CFR Program is notified by ADHS OVR of child death occurring in Arizona
- Death information shared with appropriate local team coordinator
- Local team coordinator requests records
 - Child's family may not be contacted
- Local team coordinator arranges for a meeting to review cases

Arizona Child Fatality Review Process (continued)

National Center for Child Death Review has 6 steps to a quality review:

- 1. Share, questions, and clarify all case information
- 2. Discuss the investigation that occurred
- 3. Discuss the delivery of services
- 4. Identify risk/preventive/contributing factors
- 5. Recommend systems improvements
- 6. Identify & take action to implement prevention recommendations

Arizona Child Fatality Review Process (continued)

- All cases from the previous calendar year reviewed by August 15th are compiled by the CFR Program for analysis.
 - Since 2005, 100% of child deaths occurring in Arizona have been reviewed
- State CFR Team reviews the data and team findings to generate the annual CFR report.



2009 Recommendation Topics

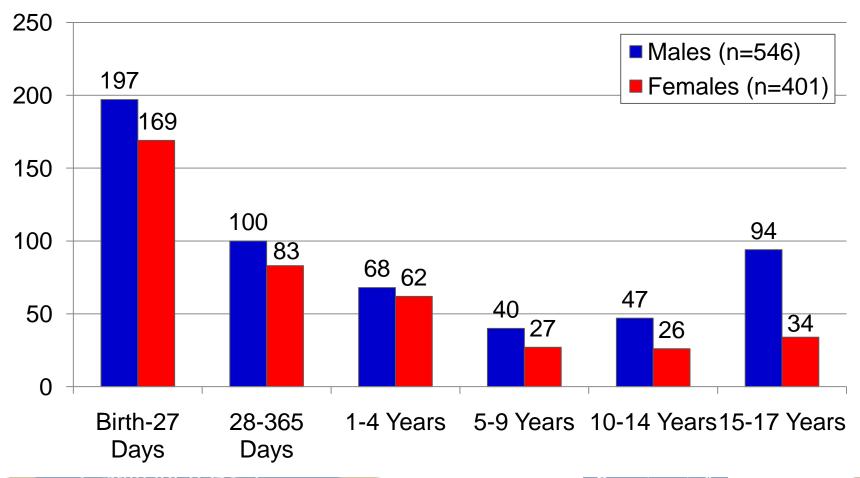
- Substance use
- Motor vehicle crashes
- Injury-related deaths
- Maltreatment
- Pneumonia/influenza
- Sudden unexpected infant deaths (SUID)
- Arizona Pregnancy Riskline



Demographics of Children Who Died during 2009



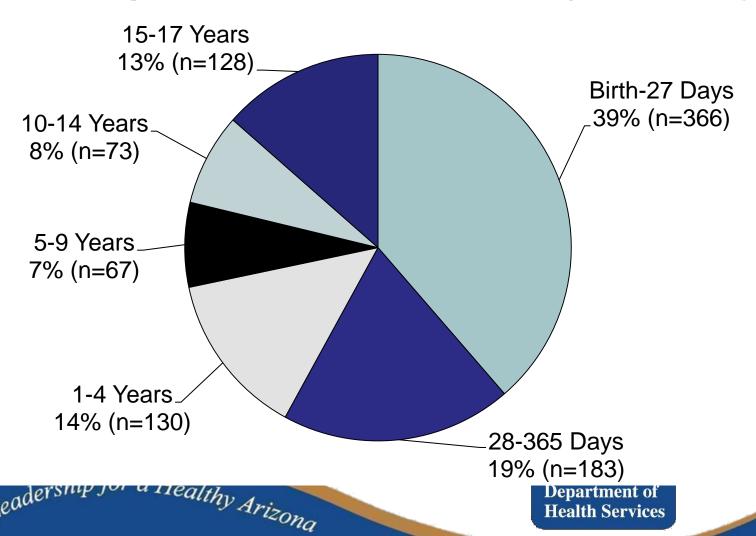
Deaths Among Children by Age Group and Sex, Arizona 2009 (n=947)



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Deaths Among Children by Age Group, Arizona 2009 (n=947)

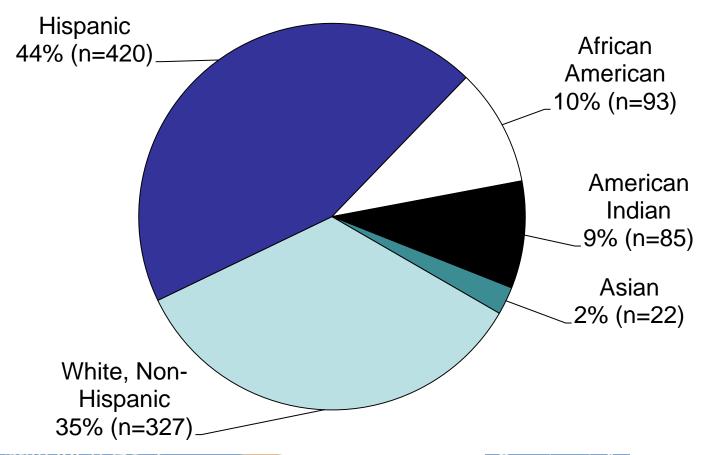


Deaths Among Children by Age Group, Arizona 2005-2009

Age Group	20	05	20	06	20	07	20	08	20	09
0-27 Days	434	38%	440	37%	485	42%	423	42%	366	39%
28-365 Days	233	20%	206	18%	225	20%	211	20%	183	19%
1-4 Years	130	11%	153	13%	113	10%	126	12%	130	14%
5-9 Years	85	7%	64	6%	67	6%	67	6%	67	7%
10-14 Years	86	8%	92	8%	92	8%	74	7%	73	8%
15-17 years	180	16%	206	18%	161	14%	137	13%	128	14%
Total	1,148		1,161		1,143		1,038		947	



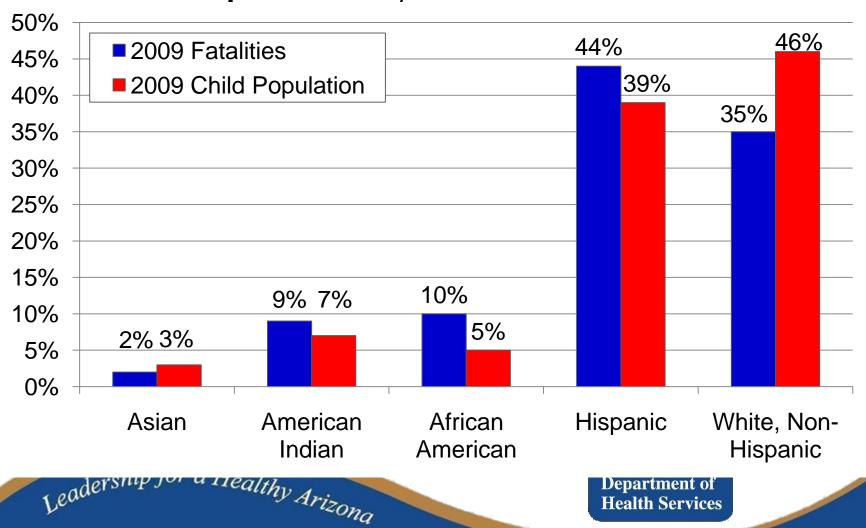
Deaths Among Children by Race/Ethnicity, Arizona 2009 (n=947)



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Deaths Among Children by Race/Ethnicity Compared to Population, Arizona 2009



Deaths Among Children by Race/Ethnicity, Arizona 2006-2009

Race/Ethnicity	2006		2007		2008		2009	
African American	102	9%	75	7%	102	10%	93	10%
American Indian	111	10%	104	9%	86	8%	85	9%
Asian	19	2%	26	2%	41	4%	22	2%
Hispanic	505	42%	529	46%	456	44%	420	44%
White, Non-Hispanic	424	37%	409	36%	353	34%	327	35%
Total	1,161		1,143		1,038		947	



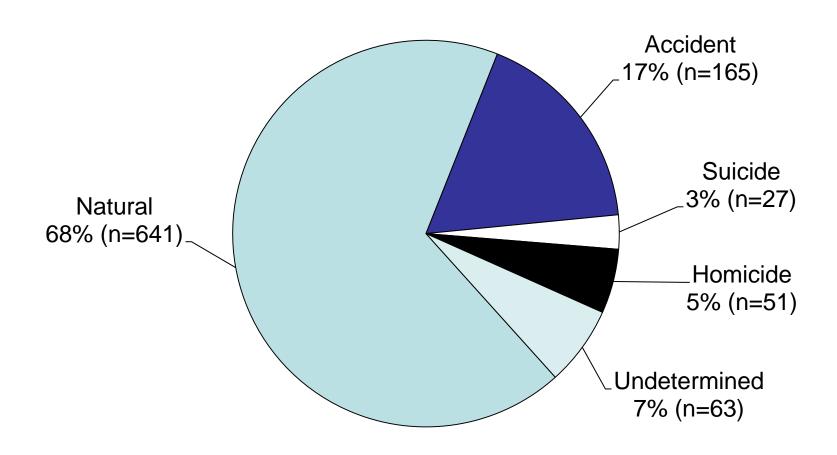
Deaths Among Children by County of Residence, Arizona 2007-2009

County	2007		2008		200	09
Apache	13	1%	21	2%	26	3%
Cochise	27	2%	24	2%	21	2%
Coconino	25	2%	25	2%	18	2%
Gila	17	1%	15	1%	9	1%
Graham	12	1%	11	1%	5	<1%
Greenlee	0		1	<1%	0	
La Paz	1	<1%	5	<1%	5	<1%
Maricopa	648	57%	575	55%	542	57%
Mohave	27	2%	12	1%	21	2%
Navajo	39	3%	31	3%	22	2%
Pima	148	13%	165	16%	130	14%
Pinal	64	6%	52	5%	60	6%
Santa Cruz	6	<1%	6	<1%	7	1%
Yavapai	28	2%	17	2%	20	2%
Yuma	35	3%	40	4%	28	3%
Outside Arizona	53	5%	38	4%	33	3%
Total	1,143		1,038		947	

Causes and Manners of Death



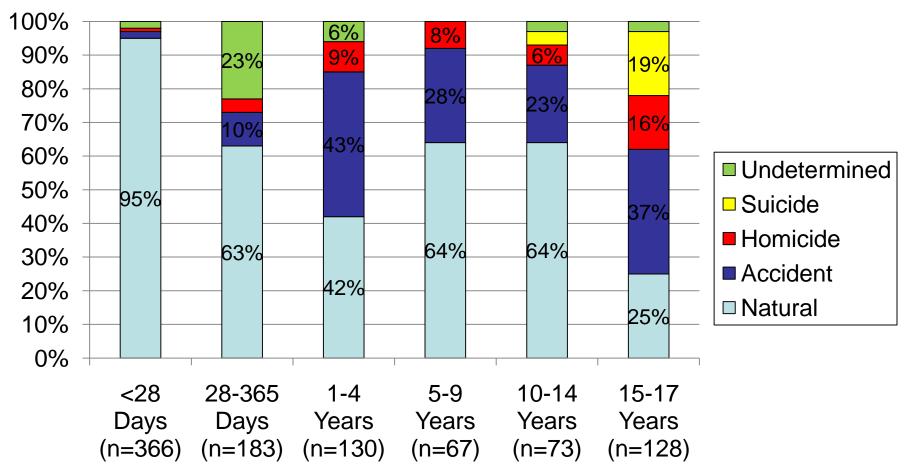
Deaths Among Children by Manner, Arizona 2009 (n=947)



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Manner of Child Deaths by Age Group, Arizona 2009 (n=947)



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Deaths Among Children by Manner, Arizona 2006-2009

Manner of Death	2006		2007		2008		2009	
Natural	743	64%	769	67%	702	68%	641	68%
Accident	270	23%	227	20%	168	16%	165	17%
Undetermined	37	3%	53	5%	73	7%	63	7%
Homicide	63	5%	66	6%	60	6%	51	5%
Suicide	48	4%	28	2%	35	3%	27	3%
Total	1,161		1,143		1,038		947	



Deaths Among Children Birth Through 17 Years by Cause and Manner, Arizona 2009 (n=947)

Cause of Death	Accident	Homicide	Suicide	Natural	Undetermined	Total
Medical*	0	1	0	371	0	372
Prematurity	0	0	0	241	0	241
Motor vehicle crash	81	1	0	0	0	82
Undetermined	1	1	0	9	46	57
Firearm injury	1	21	9	0	1	32
Drowning	33	0	0	0	2	35
Suffocation	12	2	0	0	3	17
Hanging	5	0	15	0	0	20
SIDS	0	0	0	20	8	28
Blunt force trauma	0	12	0	0	1	13
Other	4	11	0	0	1	16
Poisoning	12	1	3	0	1	17
Fall/crush	6	1	0	0	0	7
Exposure	7	0	0	0	0	7
Fire/burn	3	0	0	0	0	3
Total	165	51	27	641	63	947

*Excluding SIDS and prematurity

Deaths Among Children Birth Through 17 Years by Cause, Arizona 2007-2009

Cause of Death	2007		2008		2009	
Medical*	420	37%	420	40%	372	39%
Prematurity	321	28%	271	26%	241	25%
Motor vehicle crash	122	11%	82	8%	82	9%
Firearm injury	48	4%	49	5%	32	3%
Suffocation	27	2%	21	2%	17	2%
Drowning	23	2%	29	3%	35	4%
SIDS	37	3%	20	2%	28	3%
Blunt force trauma	18	1%	16	1%	13	1%
Strangulation	13	1%	21	2%	20	2%
Undetermined	34	3%	59	6%	57	6%
Poisoning	24	2%	14	1%	17	2%
Fire/burn	6	1%	4	1%	3	0%
Exposure	8	1%	9	1%	7	1%
Fall/crush	9	1%	9	1%	7	1%
Other	33	3%	14	1%	16	2%
Total	1,143		1,038		947	

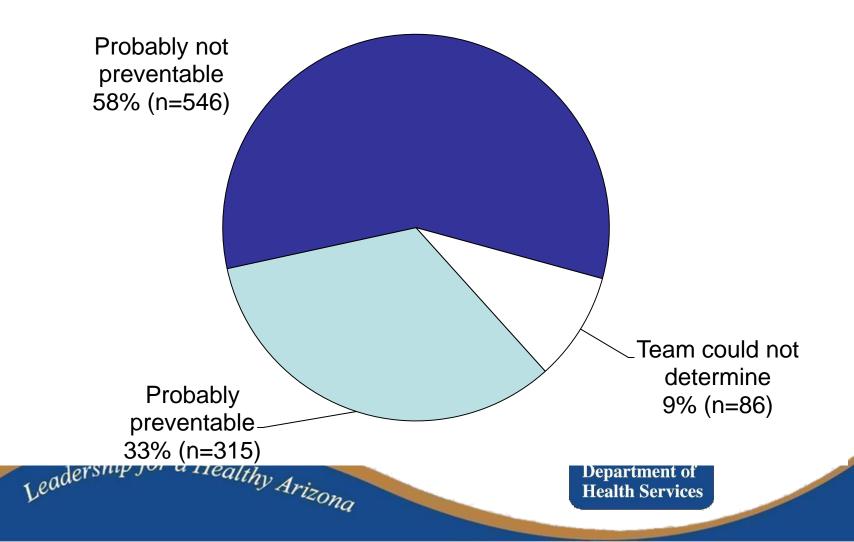
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^{*}Excluding SIDS and prematurity

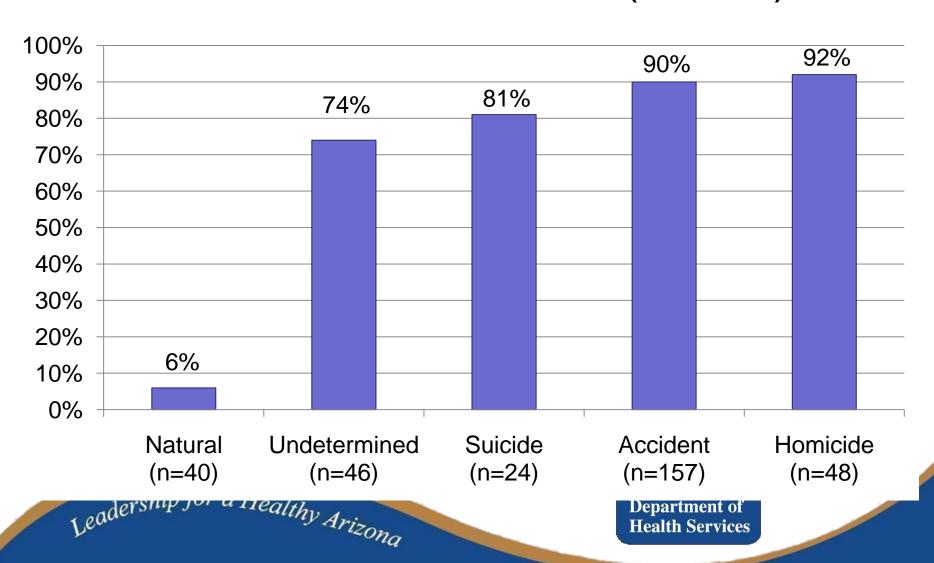
Preventability



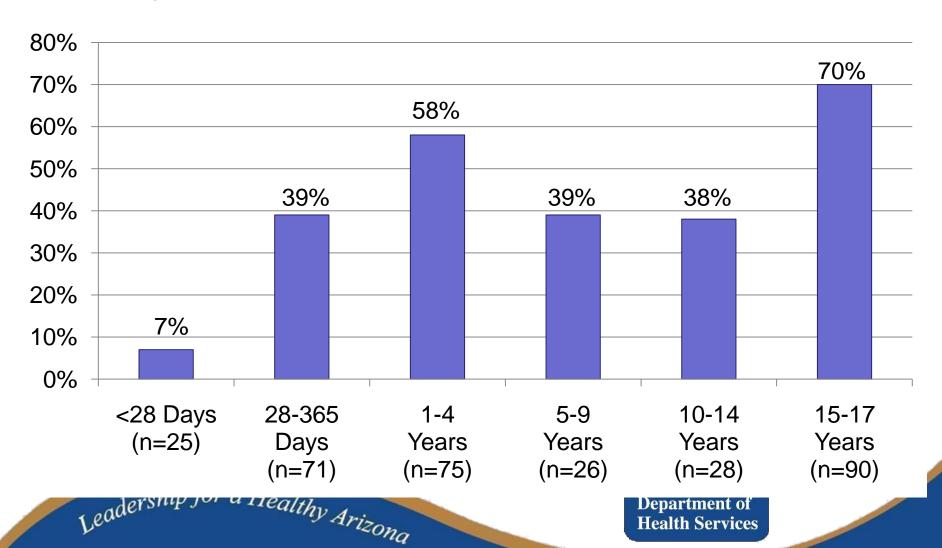
Deaths Among Children by Preventability, Arizona 2009 (n=947)



Preventable Deaths Among Children by Manner, Arizona 2009 (n=315)



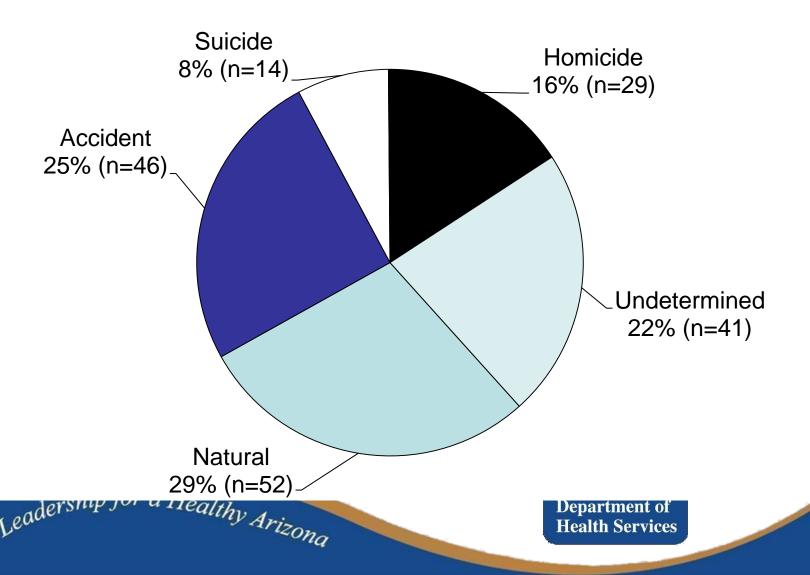
Preventable Deaths Among Children by Age Group, Arizona 2009 (n=315)



Child Deaths Involving Substance Use



Child Deaths Involving Drugs and/or Alcohol by Manner, Arizona 2009 (n=182)



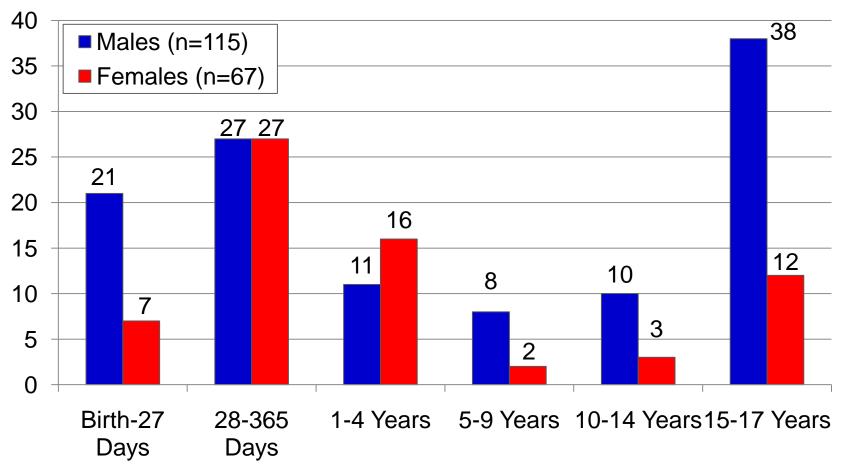
Substances Involved in Deaths Among Children, Arizona 2007-2009

Substance*	20	07	20	08	20	09	
Alcohol	80	7%	76	7%	51	5%	
Marijuana	76	7%	57	5%	67	7%	
Methamphetamine	48	4%	39	4%	53	6%	
Cocaine	31	3%	21	2%	17	2%	
Opiates	16	1%	18	2%	24	3%	

^{*}More than one substance could have been involved in a single death



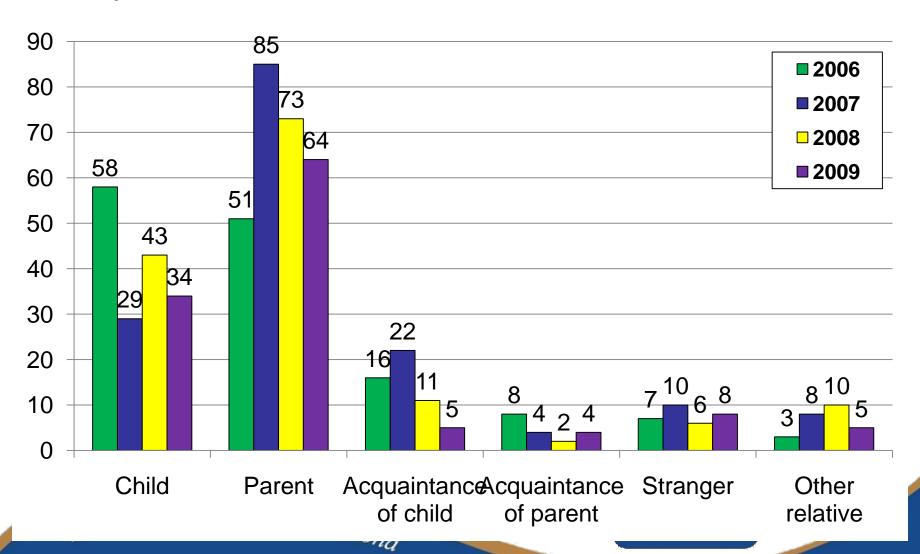
Child Deaths Involving Substance Use by Age Group and Sex, Arizona 2009 (n=182)



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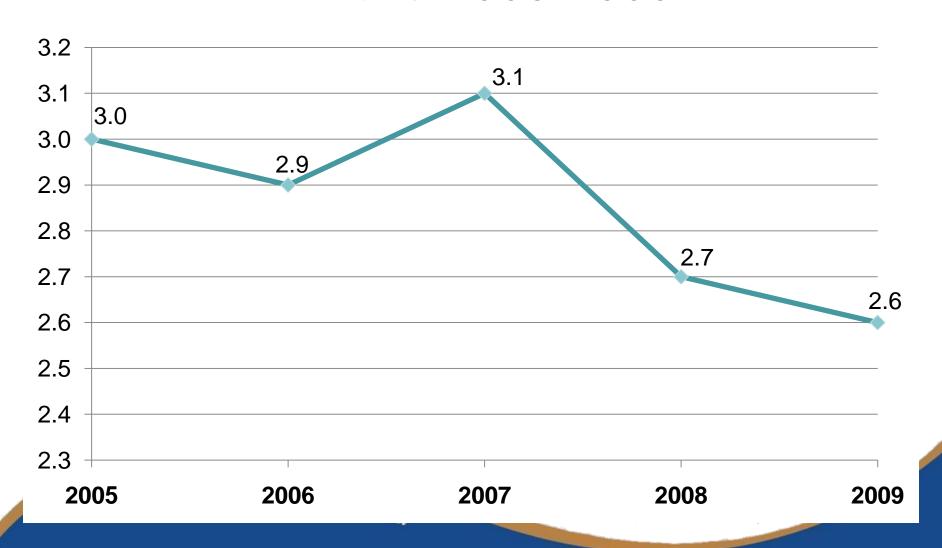
Child Deaths Involving Drugs and/or Alcohol by Substance User, Arizona 2006-2009



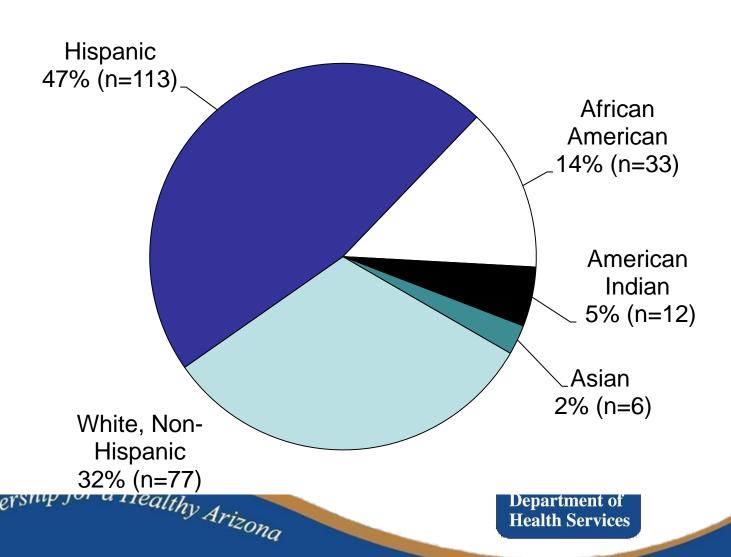
Deaths Due to Premature Birth



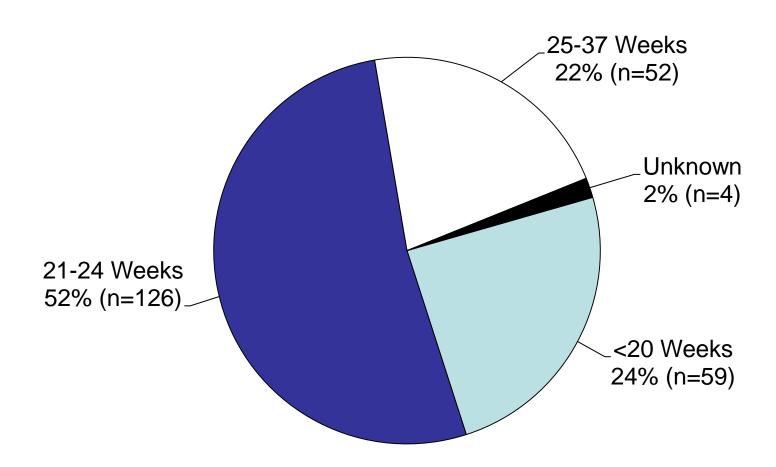
Rate of Child Deaths due to Prematurity (per 1,000 live births), Arizona 2005-2009



Prematurity Deaths by Race/Ethnicity, Arizona 2009 (n=241)



Prematurity Deaths by Gestational Age, Arizona 2009 (n=241)





Other Characteristics of Prematurity Deaths

- 42 deaths among infants in multiple births
 - 35 twins
 - 3 triplets
 - 4 quintuplets
- 80 deaths among infants with at least one parent who was a first generation immigrant to the U.S.
 - 65% had a parent from Mexico (n=52)





Maternal Characteristics of Prematurity Deaths

- 10% of mothers reported no PNC (n=24)
- 74% started PNC in 1st trimester (n=189)
- Over half of mothers were 20-29 years at the time of birth (52%, n=125)
 - 12% <19 years (n=28)
 - -33% 30-39 years (n=79)
 - -2% 40+ years (n=4)



Maternal Characteristics of Prematurity Deaths

- 49% of mothers insured by AHCCCS (n=117)
- Mother's educational attainment known in 96% of cases (n=231)
 - 13% less than high school (n=31)
 - 46% completed HS/GED (n=111)
 - 37% some college or more (n=89)





Risk Factors for Prematurity Deaths, Arizona 2009

Factor*	Number	Percent			
Maternal pregnancy or birth complications	206	85%			
Multiple birth	42	17%			
Maternal chronic illness (e.g. diabetes)	26	11%			
Smoking during pregnancy	17	7%			
Drugs and/or alcohol use during pregnancy	11	5%			
*More than one factor may have been identified for each death					



Child Deaths due to Asthma



Child Deaths due to Asthma

- 5 deaths in 2009
 - 20 deaths from 2006 through 2009
- From 2006-2009:
 - 45% male (n=9), 55% female (n=11)
 - -65% among children 10-14 years (n=13)
 - 55% preventable (n=11)
 - Disproportionate to minorities:
 - 35% Hispanic (n=7)
 - 35% African American (n=7)





Risk Factors for Child Deaths due to Asthma, Arizona 2006-2009

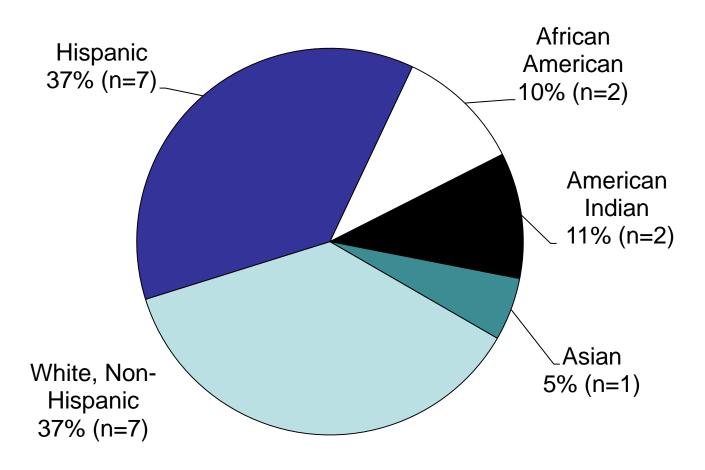
Factor*	Number	Percent			
Inadequate or no health care	10	50%			
Child's recent illness	7	35%			
Known previous hospitalizations or ED visits	5	25%			
Child ran out of medication	3	15%			
Smoking in home	2	10%			
*More than one factor may have been identified for each death					



Influenza-Related Deaths



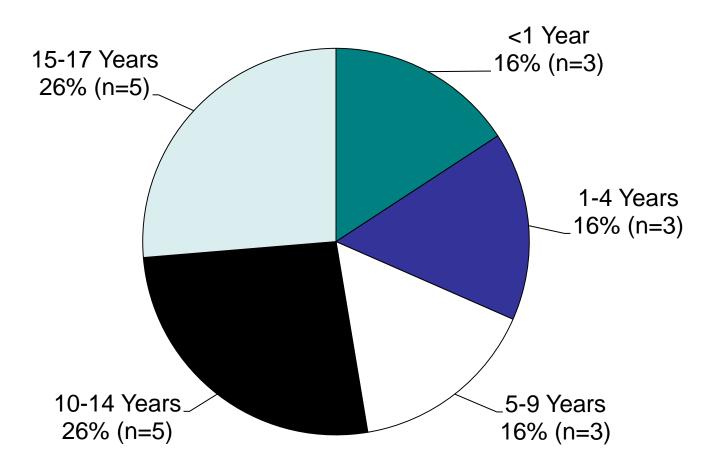
Influenza Deaths by Race/Ethnicity, Arizona 2009 (n=19)





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Influenza Deaths Among Children by Age Group, Arizona 2009 (n=19)



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Child Deaths due to Influenza

- 79% among children with underlying medical conditions (n=15)
 - 6 cases with cerebral palsy
 - 2 cases with chronic lung disease
- 11% of influenza deaths considered preventable (n=2)
 - For 32% of deaths, teams could not determined preventability (n=6)

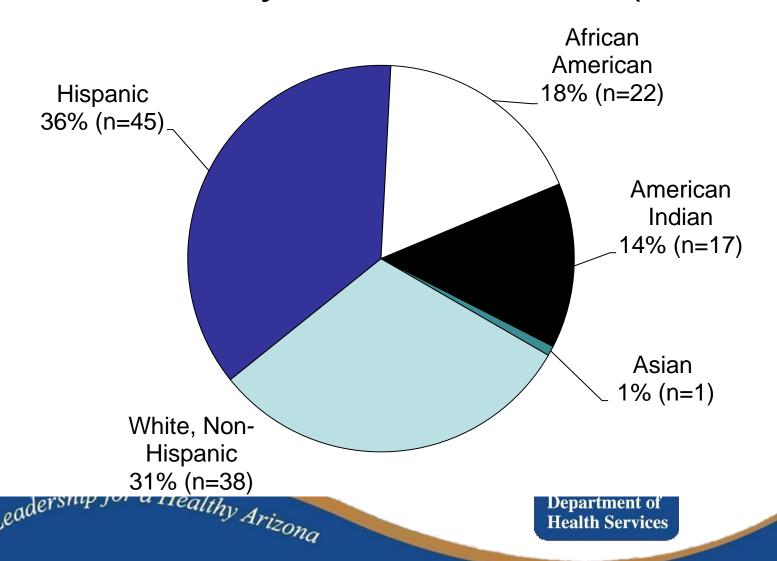




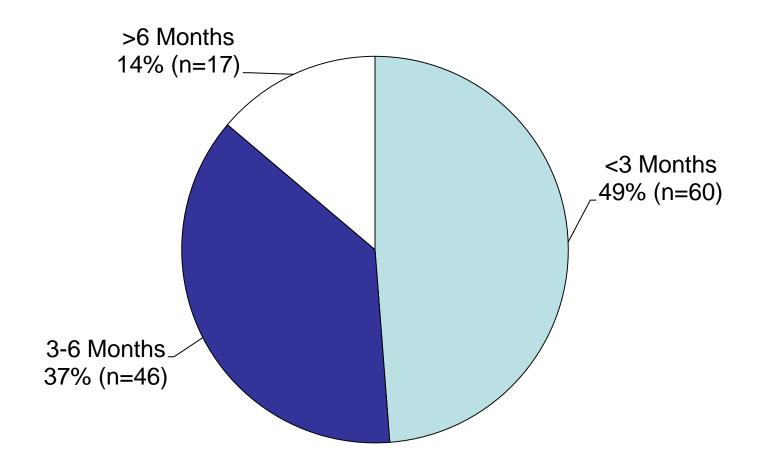
Sudden Unexpected Infant Deaths (SUID)



Sudden Unexpected Infant Deaths by Race/Ethnicity, Arizona 2009 (n=123)



Sudden Unexpected Infant Deaths by Age Group, Arizona 2009 (n=123)







Sudden Unexpected Infant Deaths by Cause, Arizona 2009 (n=123)

Cause	Number	Percent
Undetermined	40	33%
SIDS	28	23%
Suffocation	17	14%
Pneumonia/influenza	14	11%
Cardiovascular	10	8%
Other medical	10	8%
Other injury	4	3%
Total	123	



Preventable Factors for Sudden Unexpected Infant Deaths, Arizona 2009

Factor*	Number	Percent		
Unsafe sleep environment	77	63%		
Lack of supervision	66	54%		
Drugs and/or alcohol	50	41%		
Infant exposure to smoking	29	24%		
*More than one factor may have been identified for each death				



Unsafe Sleep Environments

- 74 percent of SUIDs occurred in sleep environments (n=91)
- 77 of these environments were determined to have been unsafe
- 17 unsafe sleep-related deaths were due to suffocation
- 20 deaths were identified as SIDS
- 32 deaths were of undetermined cause



Unsafe Sleep Environments

- 34 infants were bed sharing with adults and/or other children
- 21 of the adults who were bed sharing with infants were known to have been using illegal drugs, prescription drugs, and/or alcohol



Unsafe Sleeping Environments

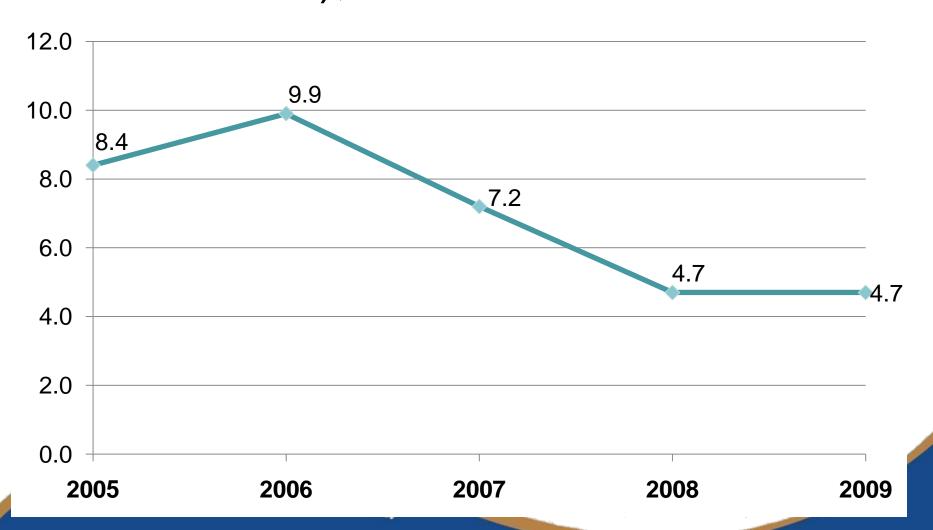
- 43 infants were sleeping in adult beds
- 2 were sleeping on couches or chairs
- 3 were sleeping in car seats or strollers
- 36 infants were put to sleep on their sides or stomachs



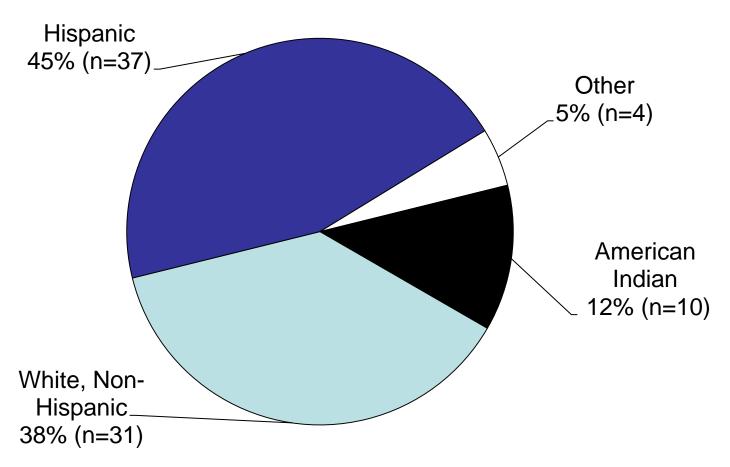
Motor Vehicle Crash Deaths



Rate of Child Deaths due to Motor Vehicle Crashes (per 100,000 children), Arizona 2005-2009



Motor Vehicle-Related Deaths Among Children by Race/Ethnicity, Arizona 2009 (n=82)





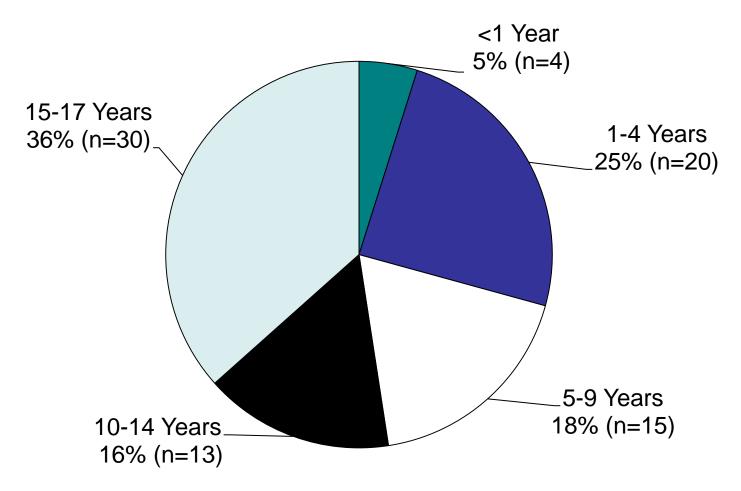


Motor Vehicle-Related Deaths Among Children by Race/Ethnicity, Arizona 2006-2009

Race/Ethnicity	20	06	20	07	20	80	20	09
American Indian	14	11%	20	12%	15	18%	10	12%
Hispanic	56	46%	69	42%	36	44%	37	45%
Other	7	6%	9	5%	5	6%	4	5%
White, Non-Hispanic	45	37%	66	40%	26	32%	31	38%
Total	122		164		82		82	



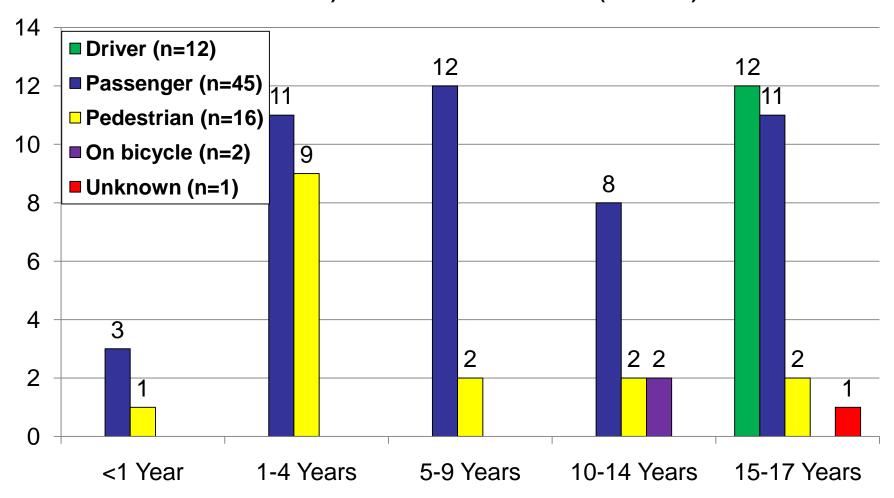
Motor Vehicle-Related Deaths Among Children by Age Group, Arizona 2009 (n=82)



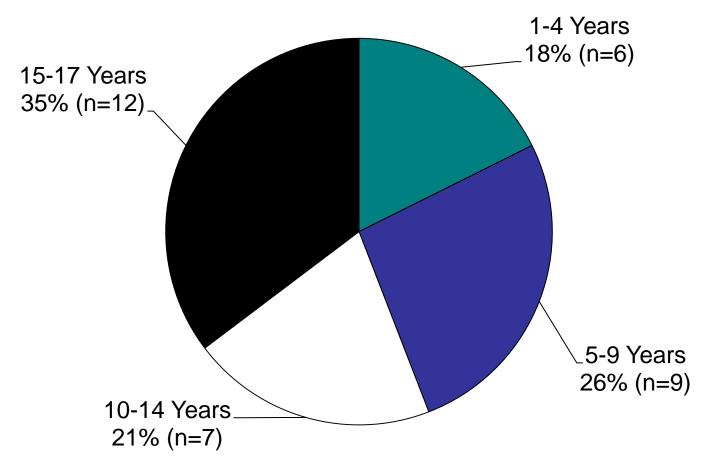
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Motor Vehicle-Related Deaths Among Children by Age Group and Location (Excluding OHV Crashes), Arizona 2009 (n=76)



Motor Vehicle-Related Deaths Among Children with Improper Restraint by Age Group, Arizona 2009 (n=34)



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A note about OHVs

- 6 cases in 2009 (10 in 2008)
 - 4 ATVs, 2 dirt bike
- 3 cases involved children at known recreation sites with helmets
- 4 cases in which child was properly helmeted; 1 case with improper helmet; 1 case with no helmet
- 3 children driving were younger than 16 years

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Preventable Factors for Motor Vehicle-Related Death Among Children, Arizona 2009

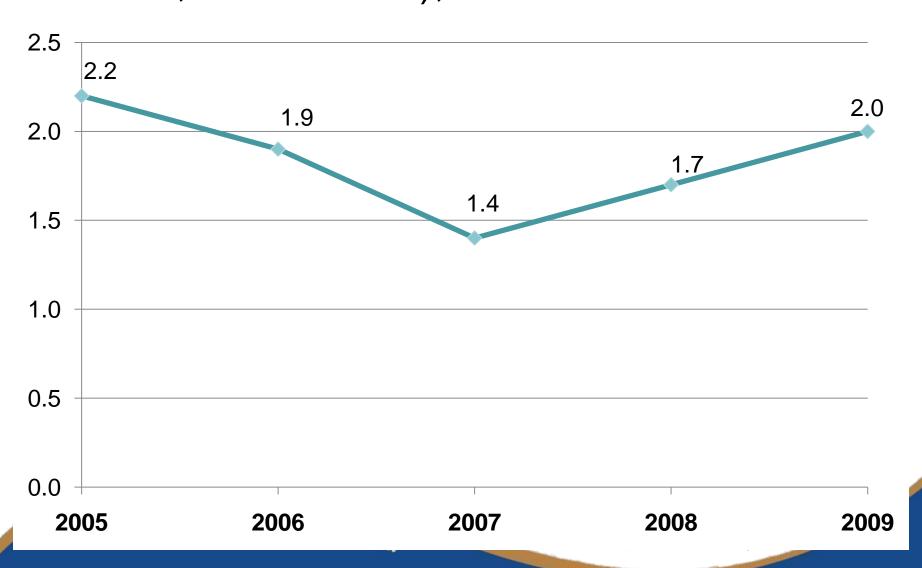
Factor*	Number	Percent		
Lack of vehicle restraint	34	41%		
Excessive driving speed	24	29%		
Driver inexperience	17	21%		
Reckless driving	15	18%		
Drugs and/or alcohol	11	13%		
Red light running	7	9%		
Driver distraction	6	7%		
Lack of helmet	4	5%		
*More than one factor may have been identified for each death				



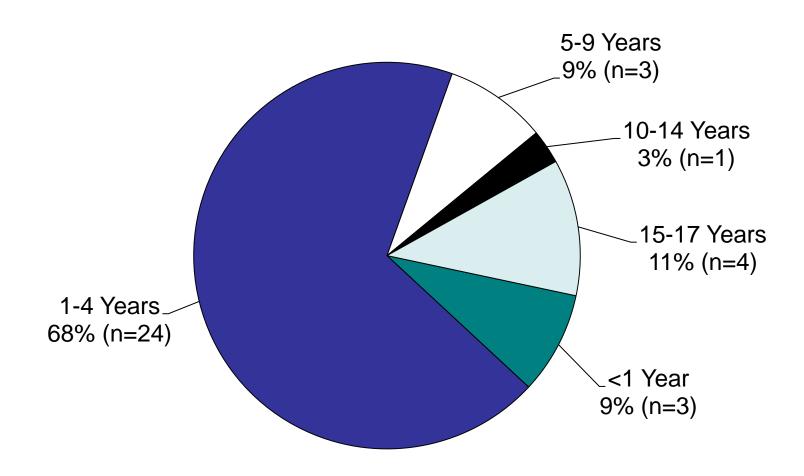
Drownings



Rate of Child Deaths due to Drowning (per 100,000 children), Arizona 2005-2009



Drowning Deaths Among Children by Age Group, Arizona 2009 (n=35)



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Drowning Deaths Among Children by Age Group, Arizona 2005-2009

Age Group	20	05	20	06	20	07	20	80	20	09
0-27 Days	1	3%	0	0%	1	4%	0	0%	0	0%
28-365 Days	1	3%	2	10%	5	22%	1	3%	3	9%
1-4 Years	20	57%	16	51%	12	53%	25	87%	24	69%
5-9 Years	6	17%	4	13%	4	17%	2	7%	3	9%
10-14 Years	1	3%	3	10%	1	4%	0	0%	1	3%
15-17 years	6	17%	6	16%	0	0%	1	3%	4	11%
Total	35		31		23		29		35	

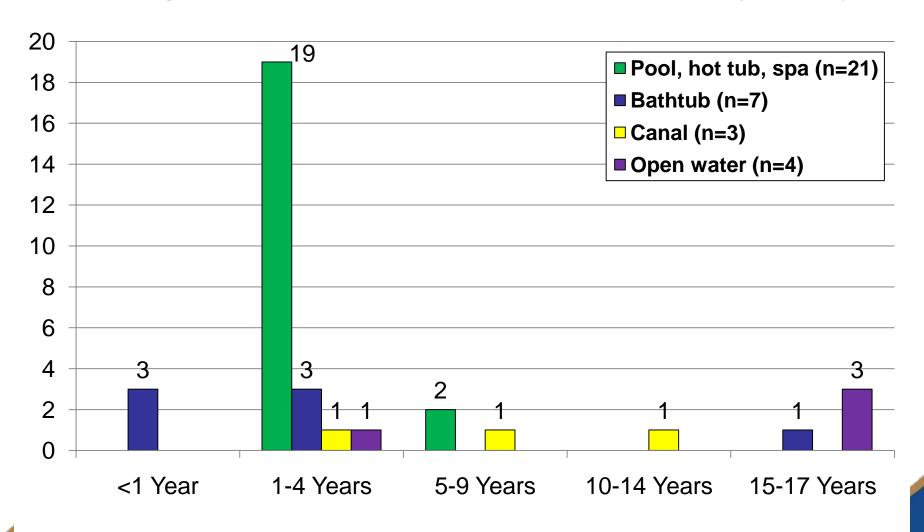


Location of Child Drowning Fatalities, Arizona 2009 (n=35)

Location	Number	Percent
In ground swimming pool	18	51%
Bathtub	7	20%
River/lake	4	11%
Canal	3	9%
Above ground swimming pool	2	6%
Hot tub/spa	1	3%
Total	35	



Drowning Deaths Among Children by Age Group and Location, Arizona 2009 (n=35)



Preventable Factors for Child Drownings, Arizona 2009

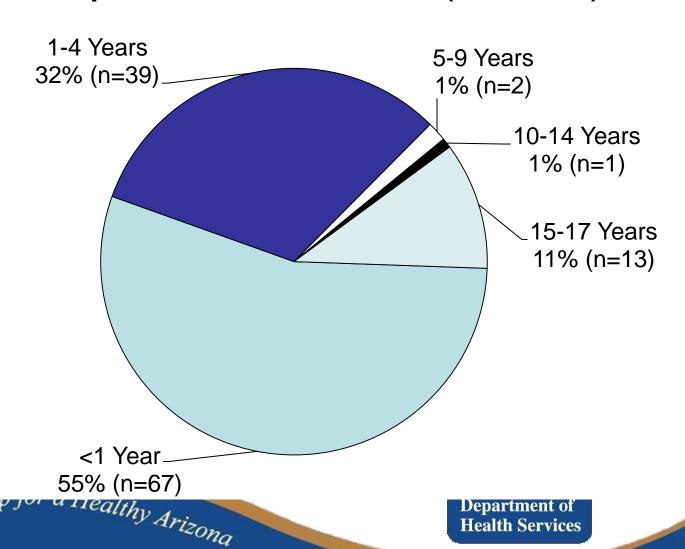
Factor*	Number	Percent			
Lack of supervision	28	80%			
Access to water	23	66%			
Drugs and/or alcohol	1	3%			
*More than one factor may have been identified for each death					



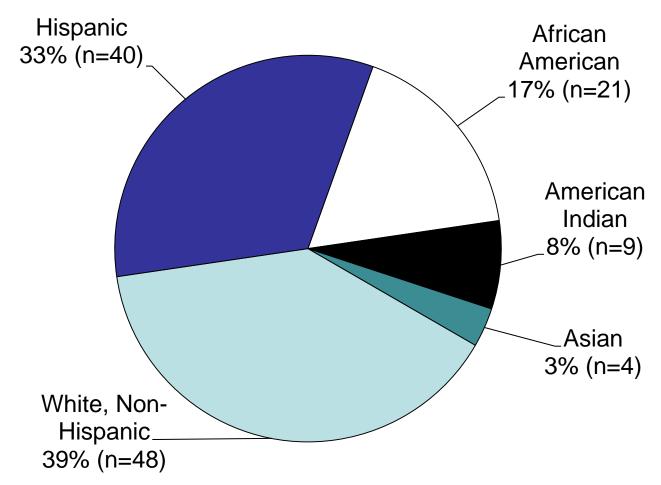
Home Safety-Related Deaths



Home Safety-Related Deaths by Age Group, Arizona 2009 (n=122)



Home Safety-Related Deaths by Race/Ethnicity, Arizona 2009 (n=122)



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Home Safety-Related Deaths by Cause, Arizona 2009 (n=122)

Cause	Number	Percent
Undetermined	44	36%
Drowning	23	19%
Suffocation	14	11%
Poisoning	11	9%
SIDS	8	7%
Other	5	4%
Fall/crush	4	3%
Hanging	4	3%
Motor vehicle crashes	4	3%
Fire	3	2%
Firearm-related injury	2	2%
Total	122	

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Preventable Factors for Home Safety-Related Deaths, Arizona 2009

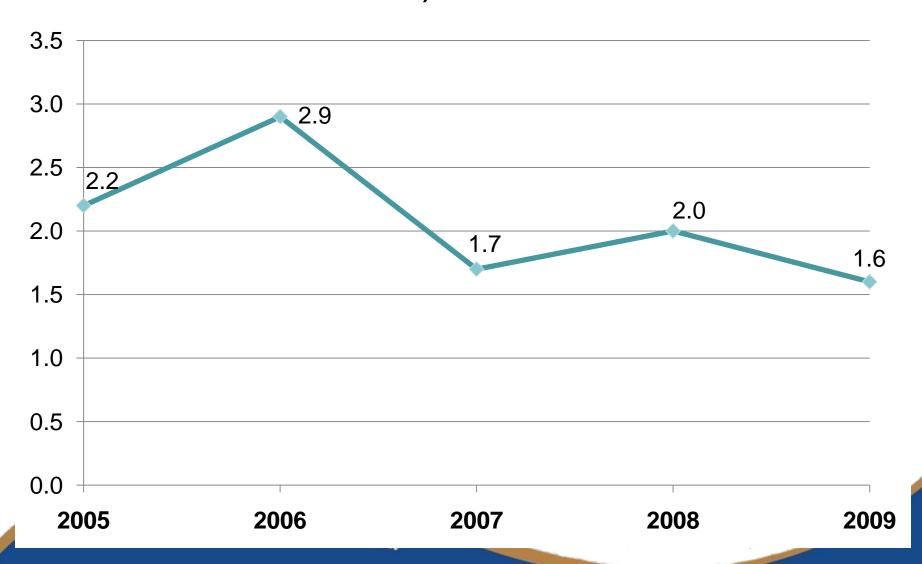
Factor*	Number	Percent		
Lack of supervision	81	66%		
Drugs and/or alcohol	59	48%		
Access to water	11%			
*More than one factor may have been identified for each death				



Child Suicides



Rate of Child Deaths due to Suicide (per 100,000 children), Arizona 2005-2009

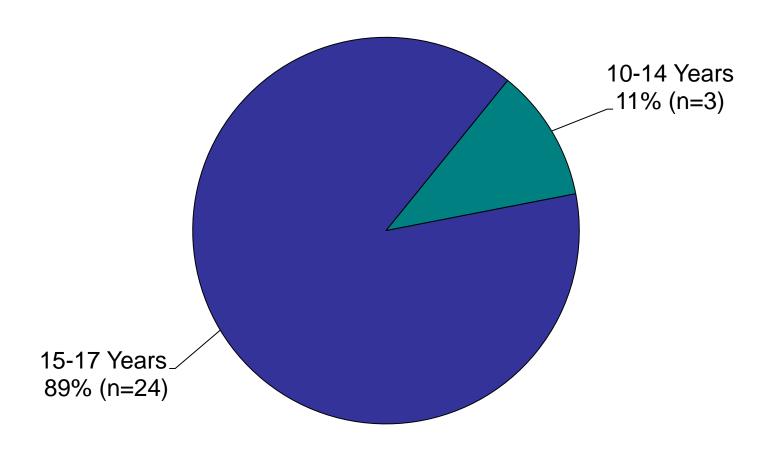


Suicides Among Children by Race/Ethnicity, Arizona 2006-2009

Race/Ethnicity	20	06	20	07	20	80	20	09
American Indian	9	19%	4	14%	6	17%	5	19%
Hispanic	13	27%	15	54%	9	26%	12	44%
Other	2	4%	1	3%	2	6%	1	4%
White, Non-Hispanic	24	50%	8	29%	18	51%	9	33%
Total	48		28		35		27	



Suicides Among Children by Age Group, Arizona 2009 (n=27)





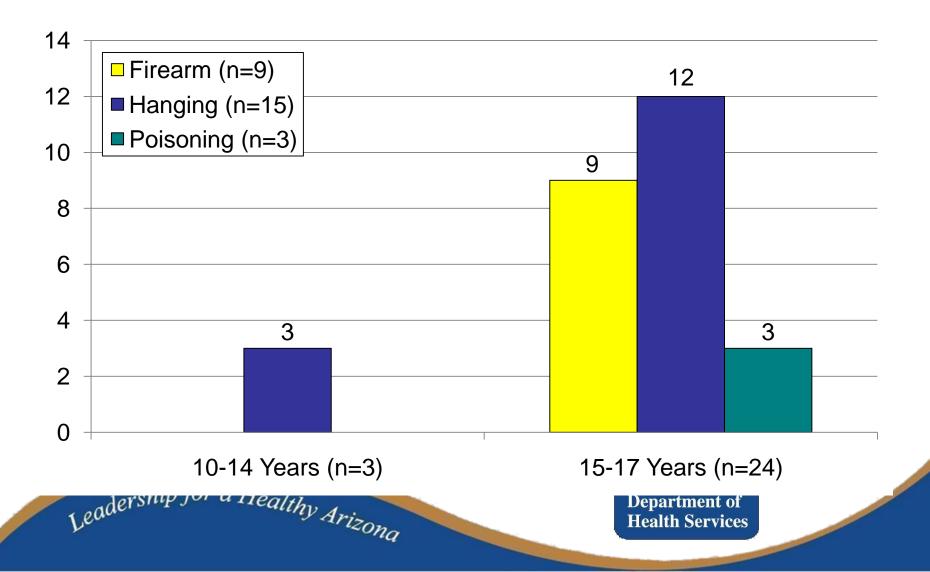


Suicides Among Children by Age Group, Arizona 2005-2009

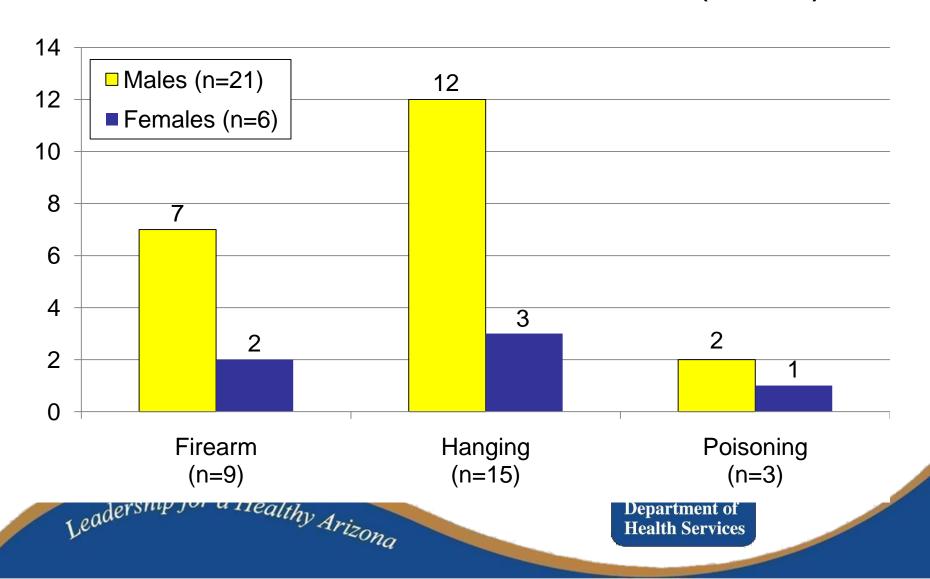
Age Group	20	05	20	06	20	07	20	80	20	009
<10 Years	0	0%	1	2%	0	0%	0	0%	0	0%
10-14 Years	13	36%	11	23%	7	25%	9	26%	3	11%
15-17 years	23	64%	36	75%	21	75%	26	74%	24	89%
Total	36		48		28		35		27	



Suicides Among Children by Cause of Death and Age Group, Arizona 2009 (n=27)



Suicides Among Children by Cause of Death and Sex, Arizona 2009 (n=27)



Factors That May Have Contributed to the Child's Despondency Prior to Suicide, Arizona 2009

Factor*	Number	Percent
History of drug and/or alcohol use	8	30%
Family discord	7	26%
Recent breakup with boyfriend or girlfriend	6	22%
Failure at school	5	19%
Recent argument with parents/caregivers	4	15%
History of physical or sexual abuse/assault	3	11%
Pregnancy or possible pregnancy	2	7%
Victim of bullying	1	4%
*More than one factor may have been identified for each death		





Preventable Factors for Child Suicides, Arizona 2009

Factor*	Number	Percent
Lack of mental health treatment**	13	48%
Access to firearms	9	33%
Drugs and/or alcohol	8	30%

^{*}More than one factor may have been identified for each death

For 37% of suicides, it was unknown if the child had ever received mental health services (n=10).

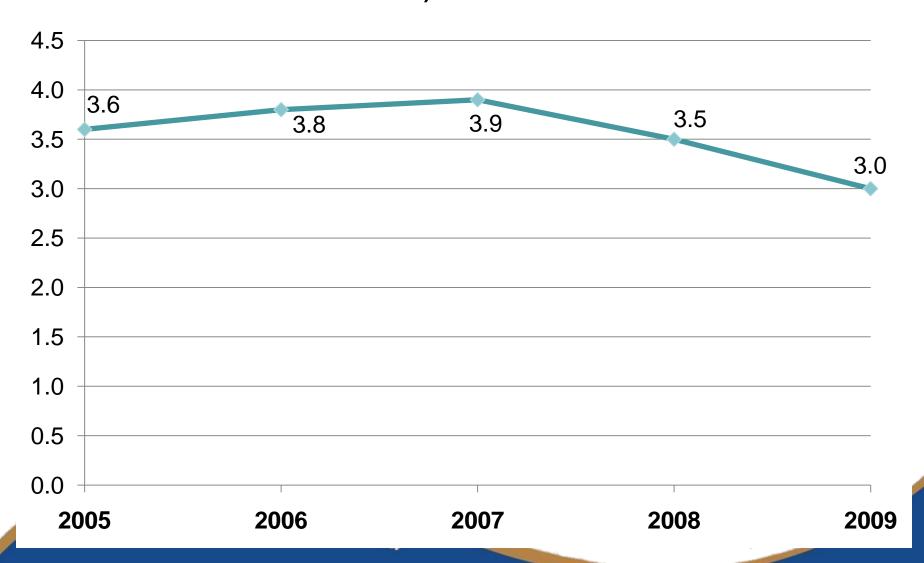
For 41% of suicides, it was unknown if the child was receiving mental health services at the time of death (n=11).



Homicides Among Children



Rate of Child Deaths due to Homicide (per 100,000 children), Arizona 2005-2009

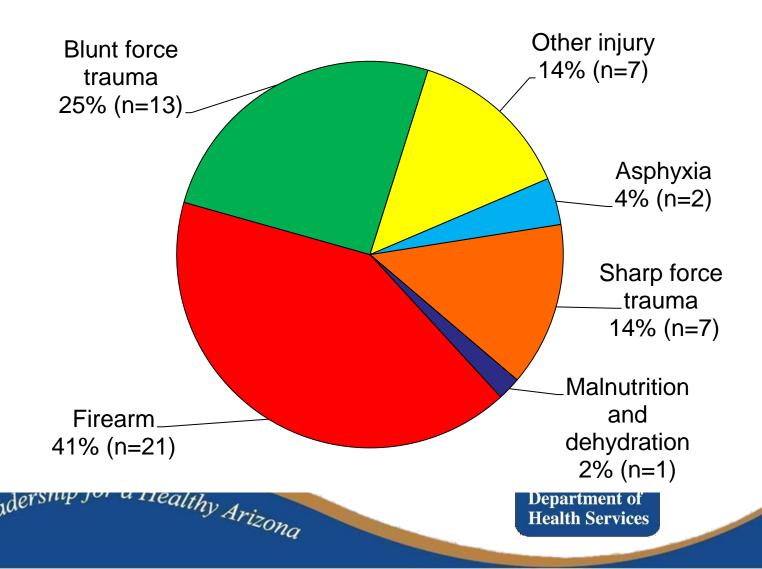


Homicides Among Children by Age Group, Arizona 2005-2009

Age Group	20	05	20	06	20	07	20	80	20	09
0-27 Days	3	5%	4	6%	3	4%	1	2%	3	6%
28-365 Days	9	15%	12	19%	13	20%	14	23%	7	14%
1-4 Years	13	22%	11	17%	12	18%	7	12%	12	24%
5-9 Years	3	5%	0	0%	7	11%	2	3%	5	10%
10-14 Years	5	9%	7	11%	5	8%	6	10%	4	8%
15-17 years	25	43%	29	47%	26	39%	30	50%	20	39%
Total	58		63		66		60		51	



Homicides Among Children by Cause of Death, Arizona 2009 (n=51)



Homicides Among Children by Perpetrator, Arizona 2009 (n=51)

Perpetrator	Number	Percent
Parent/step-parent	24	47%
Stranger	8	16%
Child's friend/acquaintance	6	12%
Mother's partner	4	8%
Unknown	3	6%
Rival gang member	2	4%
Other non-relative known to child	2	4%
Law enforcement officer	1	2%
Total	51	



Preventable Factors for Child Homicides, Arizona 2009

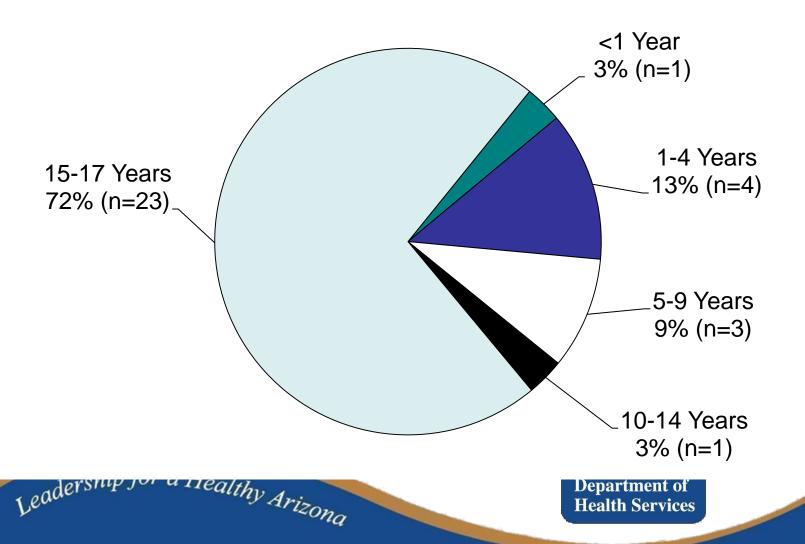
Factor*	Number	Percent			
Drugs and/or alcohol	29	57%			
Access to firearms	21	41%			
Lack of supervision	12	24%			
Involvement in gang 4 8%					
*More than one factor may have been identified for each death					



Firearm-Related Deaths



Firearm-Related Deaths Among Children by Age Group, Arizona 2009 (n=32)



Firearm-Related Deaths Among Children by Age Group, Arizona 2005-2009

Age Group	20	05	20	06	20	07	20	80	20	09
<10 Years	2	5%	1	2%	5	10%	5	10%	8	25%
10-14 Years	7	16%	13	22%	7	15%	7	14%	1	3%
15-17 years	34	79%	46	76%	36	75%	37	76%	23	72%
Total	43		60		48		49		32	

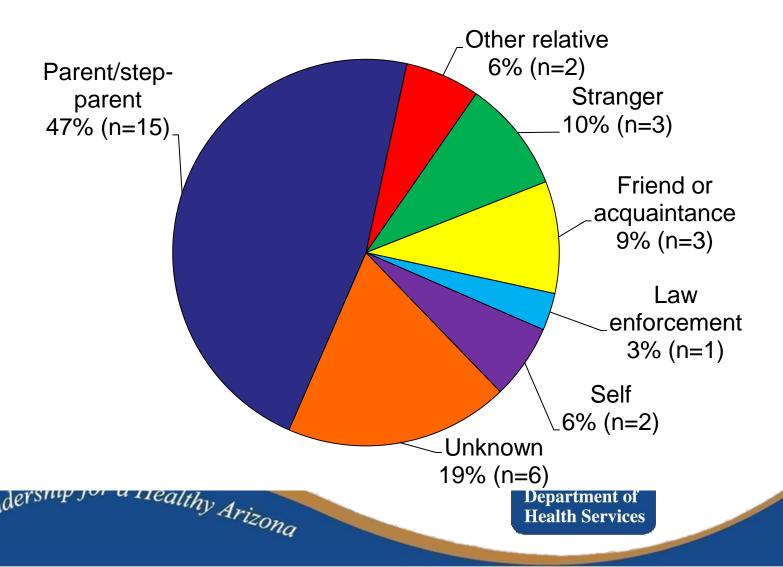


Types of Firearms Involved in Child Deaths, Arizona 2009 (n=32)

Туре	Number	Percent
Handgun	25	78%
Shotgun	3	9%
Rifle (hunting, assault)	3	9%
Unknown firearm	1	3%
Total	32	



Owners of Firearms Involved in Child Deaths, Arizona 2009 (n=32)



Locations of Firearms Involved in Child Deaths, Arizona 2009 (n=32)

Location	Number	Percent
Unknown	14	44%
Other not stored (unsecured location)	6	19%
In or under furniture (e.g. in drawer, under bed)	6	19%
Closet	5	16%
Locked cabinet	1	3%
Total	32	



Preventable Factors for Firearm-Related Deaths Among Children, Arizona 2009

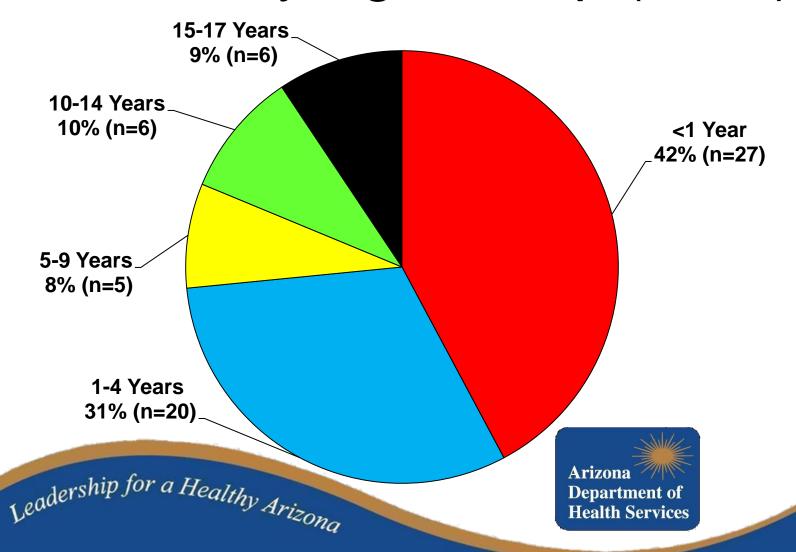
Factor*	Number	Percent		
Access to firearms	17	53%		
Drugs and/or alcohol	17	53%		
Lack of supervision	8	25%		
Involvement in gang	2	6%		
*More than one factor may have been identified for each death				



2009 Maltreatment Fatalities



Maltreatment Deaths Among Children by Age Group (n=64)



Maltreatment Deaths Among Children by Manner of Death (n=64)

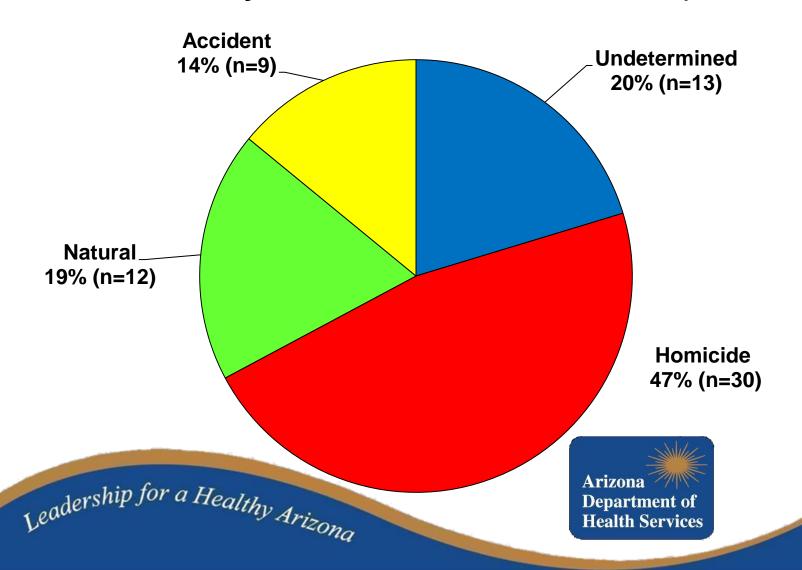


Table 27. Maltreatment Deaths Among Children by Perpetrator, Arizona 2009 (n=64)

Perpetrator	Number	Percent
Mother	29	45%
Father	23	36%
Mother's boyfriend	5	8%
Other relative	3	5%
Child's boyfriend/girlfriend*	1	2%
Foster parent	1	2%
Other relative's boyfriend/girlfriend	1	2%
Unknown	1	2%
Total	64	

^{*}May not have been under the jurisdiction of Arizona Child Protective Services

Leadership for a Healthy Arizona

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Table 28. Preventable Factors for Maltreatment Deaths Among Children, Arizona 2009

Factor*	Number	Percent
Drugs and/or alcohol	35	55%
Lack of supervision	25	39%
Unsafe sleep environment	11	17%

^{*}More than one factor may have been identified for each death



Maltreatment Deaths

- 36 percent of maltreated children were from families with prior child protective services involvement (n=23), and four of these children had prior involvement with Tribal Nation child protective services.
- Among these 23 families, five were open cases with Arizona Child Protective Services at the time of the child's death. Two open cases were in process of being closed at the time of the child's death.



Maltreatment Deaths

- For 22 maltreatment deaths, mandatory reporters did not notify Arizona Child Protective Services that the deaths were suspected to have been due to maltreatment even after the investigations. The number of maltreatments deaths that were not reported to Arizona Child Protective Services declined from 23 in 2008 to 22 in 2009, although the number of maltreatment cases increased.
- 23 cases had criminal charges filed (or expected) against the perpetrator(s).
 - In 6 additional cases, charges were not filed because the perpetrator was deceased.

Health Services

Contact Us

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